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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/709,727

05/25/2004

John M. Aitken

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12/02/2005

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EXAMINER

PRENTY, MARK V


ART UNIT

PAPER NUMBER

2822

DATE MAILED: 12/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<p align="center"><b>Office Action Summary</b></p>	<p>Application No.</p> <p align="center">10/709,727</p>	<p>Applicant(s)</p> <p align="center">AITKEN ET AL.</p>	
	<p>Examiner</p> <p align="center">MARK PRENTY</p>	<p>Art Unit</p> <p align="center">2822</p>	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 23 November 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) 19-24 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 13-18 is/are allowed.
- 6) ☒ Claim(s) 1 and 7 is/are rejected.
- 7) ☒ Claim(s) 2-6 and 8-12 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 August 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>May 25, 2004</u> .  | 6) <input type="checkbox"/> Other: _____                                    |

This Office Action is in response to the response filed on November 23, 2005.

Applicant's election without traverse of claims 1-18 is acknowledged.

Claims 19-24 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention.

Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by United States Patent Application Publication 2001/0022384 to Leonardi et al. (Leonardi).

With respect to independent claim 1, Leonardi discloses a semiconductor resistor device structure 1 (see the entire patent, including the Fig. 6 disclosure, for example) comprising a single trench 4 buried in a semiconductor substrate 2, the trench filled with a conductive material 3, and lined with an insulator material.

Claim 1 is thus rejected under 35 U.S.C. 102(b) as being anticipated by Leonardi.

Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by United States Patent 5,352,923 to Boyd et al. (Boyd).

With respect to independent claim 1, Boyd discloses a semiconductor resistor device structure (see the entire patent, including the Fig. 6 disclosure, for example) comprising a single trench buried in a semiconductor substrate 32, the trench filled with a conductive material 70, and lined with an insulator material 50.

Claim 1 is thus rejected under 35 U.S.C. 102(b) as being anticipated by Boyd.

Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by United States Patent 3,619,739 to Camenzind et al. (Camenzind).

With respect to independent claim 1, Camenzind discloses a semiconductor resistor device structure (see the entire patent, including the Fig. 11 disclosure, for

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example) comprising a single trench buried in a semiconductor substrate, the trench filled with a conductive material 36, and lined with an insulator material.

Claim 1 is thus rejected under 35 U.S.C. 102(b) as being anticipated by Camenzind.

Claim 7 is rejected under 35 U.S.C. 102(b) as being anticipated by United States Patent 6,566,226 to Hatanaka.

With respect to independent claim 7 (note that its "resistor" preamble language is not determinative of patentability), Hatanaka discloses a semiconductor device structure (see the entire patent, including the Fig. 6D and Fig. 7 disclosure, for example) comprising a single trench buried in a semiconductor substrate 41/11, the trench including a dielectric material lining 41B, and including a conductive material layer 45 formed within the trench having a bottom and two side portions extending along the length of the trench, the trench filled with a dielectric material 46A.

Claim 7 is thus rejected under 35 U.S.C. 102(b) as being anticipated by Hatanaka.

Claims 2-6 and 8-12 are objected to as being dependent upon a rejected base claim, but would be allowable over the prior art of record if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 13-18 are allowable over the prior art of record.

The prior art of record does not disclose or suggest the allowable semiconductor resistor structures taken as a whole.

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Registered practitioners can telephone the examiner at (571) 272-1843. Any voicemail message left for the examiner must include the name and registration number of the registered practitioner calling, and the Application/Control (Serial) Number. Technology Center 2800's general telephone number is (571) 272-2800.

  
Mark V. Prenty  
Primary Examiner